



SEQUENCE LISTING

<110> McGill University
Rouleau, Guy A.
Lafrenière, Ronald G.
Cossette, Patrick
Ragsdale, David

<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS
THEREOF AND METHOD USING SAME TO ASSESS, DIAGNOSE,
PROGNOSE OR OR TREAT EPILEPSY

<130> GOUD:023

<150> 09/167,623

<151> 2000-11-24

<140> PCT/CA00/01404

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<170> PatentIn Ver. 2.1

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 Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
 50 55 60

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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser	115	120	125
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Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr	145	150	155
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Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp	180	185	190
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Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu	210	215	220
Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu	225	230	235
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Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn	260	265	270
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Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu	290	295	300
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Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys	325	330	335
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Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg	1635	1640	1645
Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met	1650	1655	1660
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Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr	1860	1865	1870
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amdmsvsgdrh	cdatkrvgsg	mdarmmasn	skvsytttkr	kvsavrayrr	hkrtvkasty	1200
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<210> 5
<211> 850
<212> DNA
<213> Homo sapiens

<400> 5

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gcaaggagaa gcaatactgg gagattacag agaagaaagg aaaaaaggct gagagaaaag 180
aggttgagga agaaatcata aatctggatt gtgagaaagt gtttaatat tagccactag 240
atggcgatgt aatgtaagggt gctgtcctga cttttttttt ttttttttga aacaagctat 300
ttgctgattt gtattaggta ccatagagtgt aggcgaggat gaagccgaga agatactgca 360
gaggtctctg gtgcatgtgt gtatgtgtgc gtttgtgtgt gtttgtgtgt ctgtgtgttc 420
tgccccagtg agactgcagc ccttgtaaact actttgacac cttttgcaag aaggaatctg 480
aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttcctcac 540
tgcagatgga taattttcct tttaatcagg taagccatct aattgtttca tcttgatttt 600
aagtttattc attccagtta ttccttttga aaaagagtcc atggaaattc agtttgggca 660
gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct 720
cctcttcttg tccccctccc cgcgccctcc tctctcaacc ttccatgaac tgaaatcagg 780
tttgttttgc agttcagcat tttgatagaa gatgggattc tttggcctga aatagcttgg 840
catctggcca                                     850
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<210> 6

<211> 483

<212> DNA

<213> Homo sapiens

<400> 6

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gaataaatgg taattaaaaat gtgcaggatg acaagatgga gcaaacagtg cttgtaccac 120
caggacctga cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca 180
ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg 240
cccaaagcaa atagtgaact ggaagctgga aagaaccttc catttattta tggagacatt 300
cctccagaga tgggtgtcaga gcccctggag gacctggacc cctactatat caataagaaa 360
gtgagtgttt tttttatcag gcatattttt gctgttaatt gcctactgca ttccttggtgac 420
tggtgtagca ccaacacatg ccaatagcac aaatctagta tctctgttag aatgaacaca 480
ttt                                     483
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<210> 7

<211> 497

<212> DNA

<213> Homo sapiens

<400> 7

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agtttaagtg gtttatactt tcatacttct atgttgtgtt cctgtcttac agacttttat 180
agtattgaat aaagggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt 240
aactcccttc aatcctctta ggaaaatagc tattaagatt ttggtacatt catatccttt 300
ttcaagtgat taatattaac tatttgtaca tgatctgtaa gcactttata gctaaatatc 360
aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcattcttg 420
tcatattagc ctattcttta aagttcatta atcacataga cattactgaa acatgtactc 480
tttaacattt tatatat                                     497
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<210> 8

<211> 501

<212> DNA

<213> Homo sapiens

<400> 8

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tcatatacat tacctcattt aatctataca aatactcagt gaaggtgata ttattaccca 60
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tatccctgaa ttttggtctaa gctgcagttt gggcttttca atgttagctt tttgtaatat 180
aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca 240
tgctaattat gtgcactatt ttgacaaact gtgtgtttat gacaatgagt aaccctcctg 300
attggacaaa gaatgtagag taagttcaac ttatatTTTT aataacatat atacattygg 360
gattytgaaa ctgtgtctta atgtagtctt aaaataaaaac tgaagagcat tttattaaag 420
tcattcctag acaaaattac gcagcaagag gacaatgctc attggccctc aggctgctg 480
gcgttatact gattatcact c 501
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<210> 9

<211> 563

<212> DNA

<213> Homo sapiens

<400> 9

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gctaaataga tttcatatac cttgtatttc tcacactact ctttaagacac tttacgaaac 60
aactctttgt gttaggaagc tgaattttaa tttagggcta cgtttcattt gtatgaaatt 120
aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtataaa 180
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attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttactgt 360
cattacattt gcgtaagtgc ctttbyttaa actttaagag agaacatagt ttggttttcc 420
atcagtgtt atgcttttaa gaataggttt gctttacctg tagaatattt ttgtgtgatt 480
tatacattca aactctggat ttcaatttag cacaacaaag gtctaagtgg aatttcacta 540
tagcatgaag gctttgcagt agt 563
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<210> 10

<211> 253

<212> DNA

<213> Homo sapiens

<400> 10

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ctacaggttt gtaacagaat ttgtaaacct aggcaatttt tcagctcttc gcactttcag 120
agtcttgaga gctttgaaaa ctatttcggg aattccaggt aagaagtgat tagagtaaag 180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa 240
ctcccgccta cag 253
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<210> 11

<211> 340

<212> DNA

<213> Homo sapiens

<400> 11

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gtaagaagtg attagagtaa aggataggct ctttgtacct acagcttttt ctttgtgtcc 60
tgtttttgtg tttgtgtgtg aactcccgtc tacaggtagc tcacagagtt tgtggacctg 120
ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc 180
attccaggtg agagcaaggc tagataatga gacggaccca tcatgtgatt cagcatcctt 240
ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggc gttcaaagaa 300
atgattatta tgtagacat agcttatcag cctggagtta 340
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<210> 12
 <211> 409
 <212> DNA
 <213> Homo sapiens

<400> 12
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 gagccctgat ccagtctgtg aagaagctct cagatgtaat gatcctgact gtgttctgtc 120
 tgagcgtatt tgctctaatt gggctgcagc tgttcatggg caacctgagg aataaatgta 180
 tacaatggcc tcccaccaat gcttccttgg aggaacatag tatagaaaag aatataactg 240
 tgaattataa tggtagactt ataaatgaaa ctgtctttga gtttgactgg aagtcataata 300
 ttcaagattc aagtaagaat tattgttatg tacatttcct taaaaagtag aattggattg 360
 tttgtaacac aaaggataaa tacttgaggg gctggatatc ccattttac 409

<210> 13
 <211> 266
 <212> DNA
 <213> Homo sapiens

<400> 13
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 cgactttctt ttttcaaaca ggatatcatt atttcctgga gggtttttta gatgcactac 180
 tatgtggaaa tagctctgat gcagggtaag tcaatattgt gtgcactctgt gtatattgta 240
 tgtacacaat acatatgtgt atcttt 266

<210> 14
 <211> 604
 <212> DNA
 <213> Homo sapiens

<400> 14
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 gaaatagatt agttacttat ttgtcaaact tttattttga aataccaaat ctttctgact 180
 aggcaatatt atagcatagt atcagagtaa aaaggcagca gaacgacttg taatactttc 240
 ttttacccca cttgcagcca atgtccagag ggatatatgt gtgtgacagc tggtagaaat 300
 cccaattatg gctacacaag ctttgatacc ttcagttggg cttttttgtc cttgtttcga 360
 ctaatgactc aggacttctg ggaaaatctt tatcaactgg tgagaactaa agagccacac 420
 tctccattta agtaaaaagta tacaagaaaa ccaattgagt tatgaaatta aaaccggatg 480
 ataatatagt agaaaagagca gaacttgaca cgagacttga gttcctctat cctattgatt 540
 ataacacata ctgagcagag tgatgccaaag gattgcaatt ctctccatt tcttcttggc 600
 tcaa 604

<210> 15
 <211> 378
 <212> DNA
 <213> Homo sapiens

<400> 15
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 atattgggaa ataattctga tatttttgtt tgcagacatt acgtgctgct gggaaaacgt 120
 acatgatatt ttttgtattg gtcattttct tgggctcatt ctacctaata aatttgatcc 180

tggtctgtggt	ggccatggcc	tacgaggaac	agaatcaggc	caccttgga	gaagcagaac	240
agaaagaggc	cgaatttcag	cagatgattg	aacagcttaa	aaagcaacag	gaggcagctc	300
aggtaagctg	ccctgctcat	ggcactgacc	tttatcgtct	gatgtactat	atgagagaag	360
tagtctagag	cgtgtgat					378

<210> 16
 <211> 845
 <212> DNA
 <213> Homo sapiens

<400> 16

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cataataa	at	gttaccatgg	agcaaa	actaa	attatctcca	aaagccttca	180
agaaaaaa	aa	aatctcctct	tatacttgca	gagaatcttc	tctgtgagat	gatcttcagt	240
cagttcaata	t	at	tttttttaa	aagccatgca	aatacttcag	ccctttcaaa	300
gtctcttcag	gtgctatgtt	aaaatcattt	ctcttc	caata	tagcaggcag	caacggcaac	360
tgcctcagaa	cattccagag	agcccagtgc	agcaggcagg	ctctcagaca	gctcatctga		420
agcctctaag	ttgagttcca	agagtgtctaa	ggaaagaaga	aatcggagga	agaaaagaaa		480
acagaaagag	cagtctgggtg	gggaagagaa	agatgaggat	gaattccaaa	aatctgaatc		540
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tgaaaagagg	tactcctccc	cacaccaggt	atggcactgc	tgagtttact	gatgcatggt		660
tgaaaattaa	aacatgggag	agagggggag	at	ttagaaaa	tggactcagg	aat	720
aactgaatca	accactgttg	tg	ttatattt	aaacccatcc	cttcttcaca	tagttatgca	780
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tgaca							845

<210> 17
 <211> 965
 <212> DNA
 <213> Homo sapiens

<400> 17

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taatcccaag	ggctagaaac	tttctttttat	caaggtaatt	taattttaatg	tgaatgcaca	180
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cttctacata	atcttgcaaa	atgaaatcac	attcaaatgt	ccatattaat	atgactctat	300
ttgthtgctc	tttcaaaactt	ctagtcctttg	ttgagcatcc	gtggctccct	at	360
aggcgaata	gcagaacaag	cctttttcagc	tttagagggc	gagcaaagga	tgtgggatct	420
gagaacgact	tcgcagatga	tgagcacagc	acctttgagg	ataacgagag	ccgtagagat	480
tccttgtttg	tgccccgacg	acacggagag	agacgcaaca	gcaacctgag	tcagaccagt	540
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tgcaatgggtg	tgggttcctt	ggttgggtgga	ccttcagttc	ctacatcgcc	tgttgacag	660
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tgatagacta	accaactaaa	acttaaaacc	ttagcagtcg	cctgcacaaa	cctgaatgca	900
tttacttatt	aaaagtgtcta	aggattgatt	agacacaata	attactgcct	ccagttggag	960
gattt						965

<210> 18
 <211> 641
 <212> DNA

<213> Homo sapiens

<400> 18

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gttaacatct tggtttttgc tgtatgacta aatggttaac agtttgaaca ttccaggcta 120
atgatacaat aagtcagaaa tatctgccat caccaattga atatgaaagt gcatgatgca 180
tgtgtttcat gaaattcact gtgtcaccat ttggttgttt gcttgtcata ttgtcaaat 240
taattgttta atgcattagc attttttttt acagggaaaca accactgaaa ctgaaatgag 300
aaagagaagg tcaagttctt tccacgtttc catggacttt ctagaagatc cttcccaaag 360
gcaacgagca atgagtatag ccagcattct aacaaataca gtagaagggt ggtaacaaat 420
tctattttcg tttcaattat tttcaccaa cttatatgtt ctcatctcaa acaaataat 480
ttgtgagttg ggaatagtgc attctaata aaagacagtc taattcaaga gctgttattt 540
cttataatcta ctcatatatt ctagaagcct taacaattta ttttaaaatg agtgatattg 600
ggactaagac tgttttccta actgtgtagc aactccttga a 641
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<210> 19

<211> 818

<212> DNA

<213> Homo sapiens

<400> 19

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cagtgcataa gacaaaaaac taccatttgt tacctgggcc ctatgtgtgt gtctgatgaa 120
ataaccttgg gaggttttaga gtaaactgta atttttttta caagtacaaa aaaggggtgc 180
tctgtaacaa aaatgtgttg attactgaaa ataagtttag tggatatgaa ataaatgtgt 240
gtgtataaag tawacctttt ggtgggtctt tttttttttt ttcttaatct agaacttgaa 300
gaatccaggc agaaatgccc accctgttgg tataaatttt ccaacatatt cttaatctgg 360
gactgttctc catattgggt aaaagtgaaa catgttgtca acctgggtgt gatggacca 420
tttgttgacc tggccatcac catctgtatt gtcttaaata ctcttttcat ggccatggag 480
cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata 540
ttggaaggta aatgtgttta gtcttcaaat tttctgcttg aaaaactgtt tacatttaat 600
tgtgtatagc agtctttcaa ccaccttca tgcttcctgg cccctgcaaa atcgcaatta 660
tatttagctg gctatactct acttttttgc caaaaataat cacccttaat gtgctcacia 720
aaactgagaa aggcataggc ctacagcact acttgaaaag tcaacagcaa tatttataat 780
ttttcaggat ccagaagtag ctcatagatt aagaacat 818
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<210> 20

<211> 645

<212> DNA

<213> Homo sapiens

<400> 20

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ttatctactt cgcgtttcca caaggataaa attaaataat gtatatgawa gtctttcatc 120
aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata 180
agcattatgt tctaagagca aatcttatgt catgtatgtt attatctggg ggaattagat 240
taattttgtt ttgatcttag gttttcaactg ggatctttac agcagaaatg tttctgaaaa 300
ttattgccat ggatccttac tattatttcc aagaaggctg gaatatcttt gacggtttta 360
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gttcatttgc attggtaaaa aaaaaaaaaa aaggaaacca attcaaaaac ctttctaaca 480
ttcagggttc ttgcatagca ttgtcatagt ttttttgcca cacaaccatt aggcattgta 540
agtttttctg taacatttgc attgtcaaaa acttttccta catgggaata attctcaatt 600
attaggttac cttagttcaa gggcwaggtc ggaaaggtaa cggtt 645
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<210> 21
 <211> 829
 <212> DNA
 <213> Homo sapiens

<400> 21
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 aaatatatat taatcttttca ttttccagct gcgagatttc aagttggcaa aatcttggcc 120
 aacgtttaaatt atgctaataa agatcatcgg caattccgtg ggggctcttg gaaatttaac 180
 cctcgtctttg gccatcatcg tcttcatttt tgccgtggtc ggcattgcagc tctttggtaa 240
 aagctacaaa gatttgtgtct gcaagatcgc cagtgtattgt caactccac gctggcacat 300
 gaatgacttc ttccactcck hccgtattgt gttccgcgtg ctgtgtgggg agtggataga 360
 gaccatgtgg gactgtatgg aggttgctgg tcaagccatg tgccttactg tcttcatgat 420
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 caccagcatg gcacatgtat acatatgtaa ctaacctgca cattgtgcac atgtacccta 540
 aaactttaaag tataataaaa aaaaagagta taatttaatt gtgactgttt tgtcaaaaag 600
 aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcactttaa 660
 caacacagca atatabcagt gcccctgcat tttttatacc aaattctatt ttgtcagtca 720
 ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg 780
 atgtgctggg accattttat aaattcagag ccaaggaaga gagaagtct 829

<210> 22
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 22
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 agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca 180
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 ttataatcat gtttttgggtg tttttaagggt cctgaatctc tttctggcct tgcttctgag 360
 ctcatttagt gcagacaacc ttgcagccac tgatgatgat aatgaaatga ataactctca 420
 aattgctgtg gataggatgc acaaaggagt agcttatgtg aaaagaaaaa tatatgatt 480
 tattcaacag tccttcatta ggaaacaaaa gatttttagat gaaatttaac cacttgatga 540
 tctaaacaac aagaaagaca gttgtatgtc caatcataca gcagaaattg ggaaagatct 600
 tgactatctt aaagatgtaa atggaactac aagtgggtata ggaactggca gcagtgttga 660
 aaaatacatt attgatgaaa gtgattacat gtcattcata aacaaccca gtcttactgt 720
 gactgtacca attgctgtag gagaatctga ctttgaaaat ttaaacacgg aagactttag 780
 tagtgaatcg gatctggaag aaagcaaaga ggtaagattc tataggtgtg ggtaggtatg 840
 aatacatata catatataca tatacacaca tacagatgay cctcagctta atgatgtttt 900
 tacttaaga 909

<210> 23
 <211> 516
 <212> DNA
 <213> Homo sapiens

<400> 23
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 aaattcatag taataatcct tcttggcagg caacttatta ccaaaattaa ggactttact 180
 ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggtagca 240
 ctgtggacat cggcgcacct gtagaagaac agcccgtagt ggaacctgaa gaaactcttg 300

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aaccggaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg 360
gagtgcagct tatttagctg ttgttcagct aanataaatc acatataata aaatngcact 420
ttgtaataga tataattcaa tcacctctaa tatnttgaca gacaaaaaaa cttaaagtct 480
agtgtcatgc tttgattata tctgcccaat atntgg 516

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<210> 24
<211> 640
<212> DNA
<213> Homo sapiens

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<400> 24
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gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
acactttctg caggctgtgt acaaagattc aagtgttgtc aaatcaatgt ggaagaaggc 240
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tttgagacct tcattgtttt catgattctc cttagtagtg gtgctctggt gagtgagatt 360
aagaaaaggt gatacagcac taatttttag aacactctaa tactgatgac ttattaatcc 420
tttgtttcat tgtcttagta tccaatgcat ttttaattat cccaccttgt atcttctata 480
gatttactct ataactctat atttctggat taacttttac tatgtatgta aatataattt 540
taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca 600
gcttattcat taacaccaa ggatgtgaat attcaattac 640

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<210> 25
<211> 607
<212> DNA
<213> Homo sapiens

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<400> 25
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 Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
 420 425 430
 Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
 435 440 445
 Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
 450 455 460
 Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
 465 470 475 480
 Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
 485 490 495
 Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
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 Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
 515 520 525
 Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
 530 535 540
 Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
 545 550 555 560
 Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
 565 570 575
 Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
 580 585 590
 Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
 595 600 605
 Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
 610 615 620
 Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
 625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
 645 650 655
 Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
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 Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
 675 680 685
 His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
 690 695 700
 Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 705 710 715 720
 Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
 725 730 735
 Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
 740 745 750
 Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 755 760 765
 Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 770 775 780
 Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
 785 790 795 800
 Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
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 Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
 820 825 830
 Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
 835 840 845
 Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
 850 855 860
 Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 865 870 875 880
 Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 885 890 895
 Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
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 Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
 915 920 925
 Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 930 935 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
 945 950 955 960
 Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
 965 970 975
 Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
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 Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
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 Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe
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 Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His
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 Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn
 1060 1065 1070
 Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp
 1075 1080 1085
 Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
 1090 1095 1100
 Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu
 1105 1110 1115 1120
 Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn
 1125 1130 1135
 Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala
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 Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu
 1155 1160 1165
 Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile
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 Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr
 1185 1190 1195 1200
 Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe
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 Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile
 1220 1225 1230
 Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val
 1235 1240 1245

Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr
1250 1255 1260
Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu
1265 1270 1275 1280
Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr
1285 1290 1295
Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg
1300 1305 1310
Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn
1315 1320 1325
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys
1330 1335 1340
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala
1345 1350 1355 1360
Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp
1365 1370 1375
Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser
1380 1385 1390
Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val
1395 1400 1405
Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp
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Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln
1425 1430 1435 1440
Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe
1445 1450 1455
Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile
1460 1465 1470
Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
1475 1480 1485
Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu
1490 1495 1500
Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe
1505 1510 1515 1520
Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser
1525 1530 1535
Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr
1540 1545 1550

Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu
 1555 1560 1565
 Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser
 1570 1575 1580
 Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val
 1585 1590 1595 1600
 Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu
 1605 1610 1615
 Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
 1620 1625 1630
 Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr
 1635 1640 1645
 Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly
 1650 1655 1660
 Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser
 1665 1670 1675 1680
 Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn
 1685 1690 1695
 Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr
 1700 1705 1710
 Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro
 1715 1720 1725
 Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly
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 Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile
 1745 1750 1755 1760
 Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu
 1765 1770 1775
 Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu
 1780 1785 1790
 Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
 1795 1800 1805
 Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala
 1810 1815 1820
 Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile
 1825 1830 1835 1840
 Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp
 1845 1850 1855

Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
 1860 1865 1870
 Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro
 1875 1880 1885
 Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln
 1890 1895 1900
 Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu
 1905 1910 1915 1920
 Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys
 1925 1930 1935
 Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp
 1940 1945 1950
 Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
 1955 1960 1965
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 35 40 45
 Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
 50 55 60
 Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
 65 70 75 80
 Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
 85 90 95
 Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu

100										105										110									
Thr	Pro	Phe	Asn	Pro	Ile	Arg	Lys	Leu	Ala	Ile	Lys	Ile	Leu	Val	His														
		115					120					125																	
Ser	Leu	Phe	Asn	Met	Leu	Ile	Met	Cys	Thr	Ile	Leu	Thr	Asn	Cys	Val														
	130					135					140																		
Phe	Met	Thr	Met	Ser	Asn	Pro	Pro	Asp	Trp	Thr	Lys	Asn	Val	Glu	Tyr														
145					150					155					160														
Thr	Phe	Thr	Gly	Ile	Tyr	Thr	Phe	Glu	Ser	Leu	Ile	Lys	Ile	Leu	Ala														
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Arg	Gly	Phe	Cys	Leu	Glu	Asp	Phe	Thr	Phe	Leu	Arg	Asp	Pro	Trp	Asn														
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Trp	Leu	Asp	Phe	Thr	Val	Ile	Thr	Phe	Ala	Tyr	Val	Thr	Glu	Phe	Val														
	195						200					205																	
Asn	Leu	Gly	Asn	Val	Ser	Ala	Leu	Arg	Thr	Phe	Arg	Val	Leu	Arg	Ala														
	210					215					220																		
Leu	Lys	Thr	Ile	Ser	Val	Ile	Pro	Gly	Leu	Lys	Thr	Ile	Val	Gly	Ala														
225					230					235					240														
Leu	Ile	Gln	Ser	Val	Lys	Lys	Leu	Ser	Asp	Val	Met	Ile	Leu	Thr	Val														
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Phe	Cys	Leu	Ser	Val	Phe	Ala	Leu	Ile	Gly	Leu	Gln	Leu	Phe	Met	Gly														
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Asn	Leu	Arg	Asn	Lys	Cys	Leu	Gln	Trp	Pro	Pro	Asp	Asn	Ser	Ser	Phe														
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Glu	Ile	Asn	Ile	Thr	Ser	Phe	Phe	Asn	Asn	Ser	Leu	Asp	Gly	Asn	Gly														
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Thr	Thr	Phe	Asn	Arg	Thr	Val	Ser	Ile	Phe	Asn	Trp	Asp	Glu	Tyr	Ile														
305					310					315					320														
Glu	Asp	Lys	Ser	His	Phe	Tyr	Phe	Leu	Glu	Gly	Gln	Asn	Asp	Ala	Leu														
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Leu	Cys	Gly	Asn	Ser	Ser	Asp	Ala	Gly	Gln	Cys	Pro	Glu	Gly	Tyr	Ile														
		340						345					350																
Cys	Val	Lys	Ala	Gly	Arg	Asn	Pro	Asn	Tyr	Gly	Tyr	Thr	Ser	Phe	Asp														
	355						360					365																	
Thr	Phe	Ser	Trp	Ala	Phe	Leu	Ser	Leu	Phe	Arg	Leu	Met	Thr	Gln	Asp														
	370					375					380																		
Phe	Trp	Glu	Asn	Leu	Tyr	Gln	Leu	Thr	Leu	Arg	Ala	Ala	Gly	Lys	Thr														
385				390						395					400														
Tyr	Met	Ile	Phe	Phe	Val	Leu	Val	Ile	Phe	Leu	Gly	Ser	Phe	Tyr	Leu														

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Ile	Asn	Leu	Ile	Leu	Ala	Val	Val	Ala	Met	Ala	Tyr	Glu	Glu	Gln	Asn				
			420					425						430					
Gln	Ala	Thr	Leu	Glu	Glu	Ala	Glu	Gln	Lys	Glu	Ala	Glu	Phe	Gln	Gln				
		435					440					445							
Met	Leu	Glu	Gln	Leu	Lys	Lys	Gln	Gln	Glu	Glu	Ala	Gln	Ala	Ala	Ala				
	450					455					460								
Ala	Ala	Ala	Ser	Ala	Glu	Ser	Arg	Asp	Phe	Ser	Gly	Ala	Gly	Gly	Ile				
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Gly	Val	Phe	Ser	Glu	Ser	Ser	Ser	Val	Ala	Ser	Lys	Leu	Ser	Ser	Lys				
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Ser	Glu	Lys	Glu	Leu	Lys	Asn	Arg	Arg	Lys	Lys	Lys	Lys	Gln	Lys	Glu				
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Gln	Ser	Gly	Glu	Glu	Glu	Lys	Asn	Asp	Arg	Val	Leu	Lys	Ser	Glu	Ser				
		515					520					525							
Glu	Asp	Ser	Ile	Arg	Arg	Lys	Gly	Phe	Arg	Phe	Ser	Leu	Glu	Gly	Ser				
	530					535					540								
Arg	Leu	Thr	Tyr	Glu	Lys	Arg	Phe	Ser	Ser	Pro	His	Gln	Ser	Leu	Leu				
545					550					555					560				
Ser	Ile	Arg	Gly	Ser	Leu	Phe	Ser	Pro	Arg	Arg	Asn	Ser	Arg	Ala	Ser				
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Leu	Phe	Ser	Phe	Arg	Gly	Arg	Ala	Lys	Asp	Ile	Gly	Ser	Glu	Asn	Asp				
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Phe	Ala	Asp	Asp	Glu	His	Ser	Thr	Phe	Glu	Asp	Asn	Asp	Ser	Arg	Arg				
		595					600					605							
Asp	Ser	Leu	Phe	Val	Pro	His	Arg	His	Gly	Glu	Arg	Arg	His	Ser	Asn				
	610					615					620								
Val	Ser	Gln	Ala	Ser	Arg	Ala	Ser	Arg	Val	Leu	Pro	Ile	Leu	Pro	Met				
625					630					635					640				
Asn	Gly	Lys	Met	His	Ser	Ala	Val	Asp	Cys	Asn	Gly	Val	Val	Ser	Leu				
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Val	Gly	Gly	Pro	Ser	Thr	Leu	Thr	Ser	Ala	Gly	Gln	Leu	Leu	Pro	Glu				
			660					665						670					
Gly	Thr	Thr	Thr	Glu	Thr	Glu	Ile	Arg	Lys	Arg	Arg	Ser	Ser	Ser	Tyr				
		675					680					685							
His	Val	Ser	Met	Asp	Leu	Leu	Glu	Asp	Pro	Thr	Ser	Arg	Gln	Arg	Ala				
	690					695					700								
Met	Ser	Ile	Ala	Ser	Ile	Leu	Thr	Asn	Thr	Met	Glu	Glu	Leu	Glu	Glu				

705		710		715		720
Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys						
		725		730		735
Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val						
		740		745		750
Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys						
		755		760		765
Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr						
		770		775		780
Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly						
785		790		795		800
Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr						
		805		810		815
Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser						
		820		825		830
Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val						
		835		840		845
Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp						
		850		855		860
Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala						
865		870		875		880
Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala						
		885		890		895
Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys						
		900		905		910
Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe						
		915		920		925
Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile						
		930		935		940
Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu						
945		950		955		960
Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn						
		965		970		975
Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala						
		980		985		990
Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly						
		995		1000		1005
Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe						

1010	1015	1020
Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu Ile Lys 1025 1030 1035 1040		
Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His 1045 1050 1055		
Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn 1060 1065 1070		
Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp 1075 1080 1085		
Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr 1090 1095 1100		
Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu 1105 1110 1115 1120		
Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn 1125 1130 1135		
Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala 1140 1145 1150		
Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu 1155 1160 1165		
Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile 1170 1175 1180		
Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr 1185 1190 1195 1200		
Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe 1205 1210 1215		
Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile 1220 1225 1230		
Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val 1235 1240 1245		
Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr 1250 1255 1260		
Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu 1265 1270 1275 1280		
Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr 1285 1290 1295		
Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg 1300 1305 1310		
Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn		

1315	1320	1325
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys 1330	1335	1340
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala 1345	1350	1355 1360
Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp 1365	1370	1375
Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser 1380	1385	1390
Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val 1395	1400	1405
Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp 1410	1415	1420
Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln 1425	1430	1435 1440
Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe 1445	1450	1455
Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile 1460	1465	1470
Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile 1475	1480	1485
Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu 1490	1495	1500
Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe 1505	1510	1515 1520
Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser 1525	1530	1535
Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr 1540	1545	1550
Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu 1555	1560	1565
Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser 1570	1575	1580
Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val 1585	1590	1595 1600
Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu 1605	1610	1615
Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg		

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Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr		
1635	1640	1645
Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly		
1650	1655	1660
Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser		
1665	1670	1675
Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn		
1685	1690	1695
Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr		
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Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro		
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Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly		
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Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile		
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Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu		
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Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu		
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Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp		
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Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala		
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Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile		
1825	1830	1835
Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp		
1845	1850	1855
Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met		
1860	1865	1870
Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro		
1875	1880	1885
Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln		
1890	1895	1900
Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu		
1905	1910	1915
Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys		

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 1940 1945 1950
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 1955 1960 1965
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 aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
 tgtgtgtacg ctgtgaagggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
 ataatgccat tttgtagtcc ctgtacagga aatgcctctt ctacttcag ttaccagaat 300
 cctttttacag gaagttagggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
 aaaaaagatt tttttttttt taaagcatga tggaaatttta gctgcagtct tcttggggcc 420
 agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaatgt tttattattc 480
 ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa 540
 atctgcagag ggaccacttt cattttgaag ctgctggctg catgttttag catgtctctt 600
 ctattagaga atccaggcat ggcagtttcc tccccagtg tgcaaggacc atcttcatgc 660
 ctatgtctgt cgctaggcat gaggtctctc aggaatgggt gaaaaaaatg agggatgttt 720
 tggaggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctgggt 780
 tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct 840
 ctgttttatc tgggtgatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat 900
 gcattccata ta 912

<210> 38
 <211> 722
 <212> DNA
 <213> Homo sapiens

<400> 38
 ctacgtgcat gtaactgaca caatcacctc tatctaattg tcatgcttct tacctcctgt 60
 tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat 120
 ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
 ccttgctgct attgaacaac gcattgcaga agagaaagct aagagaccca aacaggaacg 240
 caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttgggaag cagsaaaatc 300
 tcttccattt atttatggag acattcctcc agagatgggt tcagtgcctc tggaggatct 360
 ggaccctac tatatcaata agaaagtgag ttcttagtca agttgccttc actgcctatt 420
 tactaattgg ttctgggcta gtcccaggga tgatggtgaa gaaggctggc ctccctccct 480
 ctgtctaaag tatcactaag atgctggatg ggctgaccg tgtaatggac caatgatcct 540

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agaagtcttt tggaagcact catttgaacc tgcatttgtg agacaggcag agaactgggtg 600
aggcatcctc cagcgcgggg attaaaggaag gacaaaagcc tattcacctt cttgaataca 660
aattatatgc ttaaaccagt gtaaattgac cctgattccc taataatgtt gagaagcaaa 720
aa 722

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<210> 39
<211> 561
<212> DNA
<213> Homo sapiens

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<400> 39
cctatggcat tgatcacaaa ttttcttaat aatcctcatg tcatttatca aatttaggaa 60
agttttatagt gctcagaaaa aaaaagcatc tatcttcatg tcatatgatg gtaattatta 120
tgttatacac tattttacag ggcaatattt ataaataatg gttttacttt tctcttaaaa 180
tattcttaat atatatctta agttttgttt tatgtgttgt gttttctttt tcagacgttt 240
atagtattga ataaagggaag agcaatctct cgattcagtg ccaccctgc cctttacatt 300
ttaactccct tcaaccctat tagaaaatta gctattaaga ttttgggtaca ttcataatcct 360
ttttcaaatc gtcacttaat atgattttct tctttgacca agttattgag ctacacattt 420
tccaaaatat ctgtggttgg caatgttatg tggtctttct ttttctttcc ttttactcaa 480
tcggttagcat gttgcaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa 540
gtgtttcttc tctacccaac t 561

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<210> 40
<211> 510
<212> DNA
<213> Homo sapiens

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<400> 40
acctaaatag cctcaaaata gttgatggct tggcctgaag acaagatcta aatatgaggt 60
tgctgagtta tagaaatggc aaaaaaagg gtcaataata gaataataag caacaaaata 120
atagtaagca ctaaagtttt aaacttcatg gtggtgaagg catggtagtg cataaaagta 180
agatttttcc attgaacttt gtcttccttg acgatattct actttattca atatgctcat 240
tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac 300
aaagaatgtg gagtaagtat aaatatTTTT caatattgac ctccctttat gtttcatatt 360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta 420
accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagcttgtag 480
tgggctcact tagttgtgta aattactgca 510

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<210> 41
<211> 370
<212> DNA
<213> Homo sapiens

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<400> 41
taagatatgt acttgtaaatt taaccactag atttttaaag tgagcttggc tattgtctct 60
caggtataacc tttacaggaa tttatacttt tgaatcactt attaaaatac ttgcaagggg 120
cttttgttta gaagatttca catttttacg ggatccatgg aattggttgg atttcacagt 180
cattactttt gcgtaagtat ctttaatacat tttctatcct ggaagagtaa atcactgggtg 240
ggagcctata ctatattttc cttggtggct tgccttgaca gaccaagcat ttntcttagt 300
aatcatagtt ttcttccaat caaattatcc agtttggaga aattaggaac tatcatagta 360
aattacatgg 370

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<210> 42

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<211> 370
 <212> DNA
 <213> Homo sapiens

<400> 42
 caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat 60
 gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaagggtcttg 120
 atgaaagacc aangaagacg tagattttccc taaattctga ataactctga ttttaattcta 180
 caggatgtga acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt 240
 cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataagggtgg 300
 taggccccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc 360
 cctattacag 370

<210> 43
 <211> 410
 <212> DNA
 <213> Homo sapiens

<400> 43
 gtaagaagaa aatggtataa ggtggttaggc cccttatatc tccaactgtt tcttgtgttc 60
 tgtcattgtg tttgtgtgtg aaccccctat tacagatatg tgacagagtt tgtggacctg 120
 ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc 180
 attccagggtg agagctagggt taaacaccga ggctgacttt agctacagtg gtgctacaat 240
 cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa 300
 gcaagaattg gtacatcatt ttttgatggg atttgattct ttgcttttta cccgttgctt 360
 tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcatga 410

<210> 44
 <211> 1066
 <212> DNA
 <213> Homo sapiens

<400> 44
 aaagagtgtt tggaataaca catttggttc atttccattc acagttttct aatgaacata 60
 caagttctgc tttcattcat tttcaccagc tagtaggctt ttcattgaaa tggtattcaa 120
 tcacaaacat taaactaata ttgttggcat tctgcatgac atttttatct tccaggccaa 180
 gctcatgata tttttgcccg taaaatagct gttgagtagt atattttaant tcccccttct 240
 gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct 300
 ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca 360
 gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt 420
 tgaaataaat atcacttcct tctttaacaa ttcattggat ggggaatggt ctactttcaa 480
 taggacagtg agcatattta actgggatga atatattgag gataaaaagta agatatactc 540
 tataaaccat taagttgttt agttctctaa atattaaata ttatatataa tggaaattat 600
 ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa 660
 agagatatca aaggatacct tattctatct ttsttatctg tccattgata tagtaaaagt 720
 tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata 780
 ttaaaaaaagg tttatttggt agacattaat cagggttttc agtcatttta ataaataagt 840
 cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa 900
 taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa 960
 ctagagaaac catttatcaa gatgaaataa gaatttgtgt gctcctcaga aggttaagta 1020
 accctgattt agccattcac ttcattccata ttctaattag tccctt 1066

<210> 45
 <211> 385

<212> DNA
<213> Homo sapiens

<400> 45
gttcaattat tgtgaaaaat cttcttttagc catatatatt tattagttta tccatctcat 60
tatgattgaa aacattttgtg agcttttgcca cctaaacagg gtggctgaag tgttttacag 120
gatttttaatg attcttttcta ttccttttctc tttaaatagg tcacttttat tttttacagg 180
ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct 240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccaactcatcc 300
agtcccacca ctctcactc aaaaccctcc ataaattcta cttcacgggtg actctcagaa 360
tgaccaggat aagtgtagat tctca 385

<210> 46
<211> 430
<212> DNA
<213> Homo sapiens

<400> 46
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt 60
cattatataa atcagtcacac ttagtgctga gttaagtact gggtaagggtg agagaaatcg 120
gcttttttct agtgccctgta taaaacagac attggcatat attaaaacag gaaaaccaat 180
tagcagactt gccgttattg actycctctc tttcctctaa cctaattaca gccagtgtcc 240
tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga 300
caccttttagt tgggcctttt tgtecttatt tcgtctcatg actcaagact tctgggaaaa 360
ccttttatcaa ctggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac 420
tcaagagaat 430

<210> 47
<211> 646
<212> DNA
<213> Homo sapiens

<400> 47
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaatttatt 60
aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt 120
ttgtgctggt cattttcttg ggctcattct atctaataaa tttgatcttg gctgtggtgg 180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg 240
aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagtga 300
caagcatacg gtcctttgtt tttctgtatc taaattcttt aacctaaatg ttgaggtcag 360
tggcaaggta gttgacatta gaaataggtc atatgtgttt ggtaagtgtc aggagcctgt 420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa 480
tggcatcaaa aaatggataa ttataattgc tttactgaca tttttttctc cttgtgact 540
ccttgaggaa attaatgatt aacaaaaggc tcatgtactc aaacttgcag agtagataaa 600
cctacatgtc ctcatgtgaa gtattttctt aggggaagag gaattc 646

<210> 48
<211> 711
<212> DNA
<213> Homo sapiens

<400> 48
tatgtatcat cttccatatg aatgcgcat tttactctttg attggtctaa taacagtgtg 60
ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcatgatat 120
tgaagctcaa ttaagcagta acatgataat tatttttttaa gatnatatgc aacttccac 180

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atacttttgcg cccttctagg cggcagctgc agccgcacatc gctgaatcaa gagacttcag 240
tggtgctggt gggataggag ttttttcaga gagttcttca gtagcatcta agttgagctc 300
caaaagtga aaagagctga aaaacagaag aaagaaaaag aaacagaaag aacagtctgg 360
agaagaagag aaaaatgaca gagtcctaaa atcggaatct gaagacagca taagaagaaa 420
aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc 480
acaccaggta aaaaatattaa attacatgaa ttgtgttctc ataaattttt taaaagaata 540
tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt 600
agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt 660
ttggaatccc aggaaggaaa ttttagatcc ctctggggtt ggaaaaattt g 711

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<210> 49
 <211> 1026
 <212> DNA
 <213> Homo sapiens

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<400> 49
ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa 60
gatgaaaaat ggaggaagga gaaaaagcga gagtgaata gaaaagggtga accttgtaga 120
aagtgccaaa atgccaccag cagtcacacag aggggtgctt tcttcacacat gtccaatgac 180
ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc 240
cagctcttaa ctctcttcat ctcatTTTTt tttcttttct tgttattcat agtccttact 300
gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt 360
cagaggtcga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac 420
ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg 480
gcgccacagc aatgtcagcc aggccagccg tgcctccagg gtgctcccca tctgccccat 540
gaatgggaag atgcatagcg ctgtggactg caatgggtgtg gtctccctgg tcggggggccc 600
ttctaccctc acatctgctg ggcagctcct accagaggtg aggccaaacy magattgcag 660
ctgatgtgaa gagagttgtg actggtgcag gcaggagtgy ttttccattt mcacatctaa 720
gaatttkttg agtttsttgc ccaaaggctg ggagtttgtt caatcaagct gtttaactgtc 780
ttgtgaaact sttctattca gacttttycta caaagtaatt aaaaacctag gttggctgtc 840
agagaatata attagamgtm atcttttcatc ayyattacta tggatgaaa ctgcgcaaaa 900
agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg 960
aaattaatgc tcacaaatta aataaatact taaggatttt gtgattgttg ttcatttaaa 1020
aggaga 1026

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<210> 50
 <211> 601
 <212> DNA
 <213> Homo sapiens

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<400> 50
ataggaaagc ccaccttgac aaaccaggg ctccccaaaa gctgaaaatc tgacagactt 60
taaacaaccc ccaaataatt atcattccaa caatatctta gtgagctttt tacatctgag 120
aaagcatggt gtatatttag ttaaataaca cctgtttagt gaatgctttg ggctttgctg 180
ctttcaaaaa tagtggttat ttcatctgaa attctacttc tagggcacia ctactgaaac 240
agaaataaga aagagacggt ccagttctta tcatgtttcc atggatttat tggagatcc 300
tacctcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaggtat 360
gttaaaagtc ctgcgtcaca gttacttggg gctttcctaa tgatgaaaaa cacttcataa 420
atttcaataa aatacttcct gacttgatat tgtatcatta ttacacattt tactaaataa 480
cagtaaaatc cgtgcataac tcatggattc atatatcca cagatttttt ttttttatat 540
ttagcctgta gaaagctgct gcaaatgtaa ggtatatattg aacaccactt tcataactta 600
a 601

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<210> 51

<211> 645
 <212> DNA
 <213> Homo sapiens

<400> 51
 gcttactagc ctttctgtac tgatcctttc tatgacagca aacccattgt aaaatthttcc 60
 ctgttcctcc agcagattaa ccataatat cttttaacaa ctttagattt tttaaattcc 120
 ttttaattta aaccaaactc gcttaataga aagtaagcag ttttcatgag gattctaact 180
 ttttttcttc cagaacttga agaatccaga cagaaatgcc caccatgctg gtataaattt 240
 gctaatatgt gtttgatttg ggactgttgt aaacatggt taaagggtgaa acacctgtgc 300
 aacctgggtg taatggaccc atttggtgac ctggccatca ccatctgcat tgtcttaaat 360
 acactcttca tggctatgga gcactatccc atgacggagc agttcagcag tgtactgtct 420
 gttggaacc tggtaagcct cactgagagt ttctcttcct cttgaaagag tttataattg 480
 ccttagtgaa ttttacatat tgctctcaaa ttaatatca actaattggc catgtatatc 540
 ttgacatcaa atgttttagca tcccttttaa ataacaaaa aatgttgcta ccatagtgca 600
 aaagagtcaa agaatttatg tacaatttga tttagaattg aattt 645

<210> 52
 <211> 485
 <212> DNA
 <213> Homo sapiens

<400> 52
 tggcccaaac caatthttta atcaggaatt taatthwtat attgttgga gttaaattaa 60
 gttgctcaat aattattcgt gtttcaakas tatttgctca tataatgaac tacacttctc 120
 atttaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat 180
 ccatattatt actttcaaga aggctggaat atthttgatg gttttattgt gagccttagt 240
 ttaatggaac ttggtttggc aaatgtggaa ggattgtcag ttctccgatc attccggctg 300
 gtaaatthaa tgggagtgtt cataaaatgt actthrtaat taattagtct tcattctcat 360
 ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaatacctt ctaaaacaga 420
 ttggttgcc ataccaccaa atggtagttt cttcttcac atagctthaa taaagttcac 480
 ttaaa 485

<210> 53
 <211> 602
 <212> DNA
 <213> Homo sapiens

<400> 53
 acagattthc tctgtgtcc atgtgactaa cccattgtgc acatgtacc taaaaattag 60
 tatataataa taaaataaaa taaaataaaa aataaaaaaa taaaataaaa ataaaattgc 120
 agattthttt agaaatgcag agattaacac tgttcttgct tttattthca gctccgagtt 180
 ttcaagttgg caaatcttg gccaaactcta aatatgctaa ttaagatcat tggcaattct 240
 gtgggggctc taggaaacct caccttggtg ttggccatca tctgttcat ttttgctgtg 300
 gtcggcatgc agctctthg taagagctac aaagaatgtg tctgcaagat ttccaatgat 360
 tgtgaactcc cagctggga catgcatgac tthttccact ccttctgat cgtgttccgc 420
 gtgctgtgtg gagagtggat agagaccatg ttggactgta tggaggctgc tggccaaacc 480
 atgtgcctta ctgtcttcat gatggtcatg gtgattggaa atctagtgg atgtagcaaa 540
 aacattthc tcattthcat taaaataaat gtaatcatta aaaagtgtc aactgaagaa 600
 ta 602

<210> 54
 <211> 803
 <212> DNA

<213> Homo sapiens

<400> 54

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gtttcatttta gcaatgattt cagtattttc tgcaatgact aataagcaaa tagtgataat 60
agtattattt tatattgacc aagcattttt atttcattca ctttttttca gaatagtgtgta 120
tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa 180
actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttcctgctgt 240
gtttcagggt ctgaacctct tcttggcctt gcttttgagt tccttcagtt ctgacaatct 300
tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cctttgttag 420
gaagcagaaa gcttttagatg aaattaaacc gcttgaagat ctaaataata aaaaagacag 480
ctgtatttcc aaccatacca ccatagaaat aggcaagac ctcaattatc tcaaagacgg 540
aaatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga 600
ttacatgtca ttataaaca accctagcct cactgtgaca gtaccaattg ctgttgagga 660
atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaag 720
caaagaggta aaatgttaaa taaggagata ttttggtgta tataatctgt gttaaatatc 780
aggtgtttta tgcgtgtctc tgt 803
```

<210> 55

<211> 615

<212> DNA

<213> Homo sapiens

<400> 55

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atctctatac taggctcaaa cagaagttat ttccgttggt agcaccatat ttttaaaaga 60
aaaaaaaaata ctatggtggt gtatctaata ttgtgacccc tgacctttac caaagcggat 120
tggcattatg tttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg 180
gggcacacct aattaatttt tatattttaga tttaagaaaa taattaaatg tgtttttttg 240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat 300
tggagctccc gccgaggagg aacagcctga ggttgaacct gaggaatccc ttgaacctga 360
agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc 420
ctcttttcta cccatttttt cctattttatt taaatgtctg tttatttgtc taccatctag 480
ttcatctatc tatctgtatc tatctatcta totatctatc tagtaatcat ctatacctat 540
ccaacaactg tacattttatt tgtttttttt ttttgcatth gctgtttgaa aaaaaatgca 600
acgtttttaa ggcaa 615
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<210> 56

<211> 400

<212> DNA

<213> Homo sapiens

<400> 56

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gatagctttt gtaagcggaa gctatcttaa aaattaatgt tatttacaat gtattatcag 60
gtaataatgt aaatgaatct cccaccaaca caaatatacc taatcaaaga gtaatttttt 120
gtcttcattt ttttccaca tattttagac tgtgtacgga agttcaagtg ttgtcagata 180
agcatagaag aaggcaaagg gaaactctgg tggaaattga ggaaaacatg ctataagata 240
gtggagcaca attggttcga aaccttcatt gtcttcatga ttctgctgag cagtggggct 300
ctggtaggtg atgcatgac cactccttca cctttcatct gaaatctttt ccctttccct 360
tcaatcaact catattaccc acttttaaat taagggtgtt 400
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<210> 57

<211> 560

<212> DNA

<213> Homo sapiens

<400> 57

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aaattactga aacccttgggt tgactgaaat gccagtcag cagtcattta tgatcagata 60
atgataaagt aaaattcagc catgggaaac attaaacctt ccagccttag gcacctgata 120
agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa 180
aattttaatag aattttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa 240
accattaaga ccatgttaga atatgctgac aaggttttca cttacatatt cattctggaa 300
atgctgctaa agtgggttgc atatggtttt caagtgtatt ttaccaatgc ctgggtgctgg 360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata 420
tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca 480
gcccaaatat aaattatgtt tctcatttca cagtgaaggg atgcctcaaa acatttttta 540
ccaatttaaa tacatatata 560
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<210> 58

<211> 480

<212> DNA

<213> Homo sapiens

<400> 58

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ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg 360
acacttttga ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact 420
gacatagcta atcaatcaaa aataatattt accagatgcc cataatactt ggcaactgctg 480
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<210> 59

<211> 640

<212> DNA

<213> Homo sapiens

<400> 59

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<210> 60

<211> 480

<212> DNA

<213> Homo sapiens

<400> 60

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 <212> DNA
 <213> Homo sapiens

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<210> 62
 <211> 560
 <212> DNA
 <213> Homo sapiens

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tgtgggattt taacacaaag ttttttacct taacaatggg actagctagc ctaaatagct 480
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<210> 63
 <211> 650
 <212> DNA
 <213> Homo sapiens

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<400> 63
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650

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<212> DNA
<213> Homo sapiens

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Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160
Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175
Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190
Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp
195 200 205
Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220
Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240
Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255
Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270
Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285
Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
 305 310 315 320
 Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
 325 330 335
 Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
 340 345 350
 Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
 355 360 365
 Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
 370 375 380
 Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
 385 390 395 400
 Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
 405 410 415
 Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
 420 425 430
 Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
 435 440 445
 Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
 450 455 460
 Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
 465 470 475 480
 Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
 485 490 495
 Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
 500 505 510
 Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
 515 520 525
 Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
 530 535 540
 Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
 545 550 555 560
 Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
 565 570 575
 Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
 580 585 590
 Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
 595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
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 Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
 625 630 635 640
 Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655
 Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 660 665 670
 Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685
 Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700
 Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720
 Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 725 730 735
 Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750
 Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765
 Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780
 Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
 785 790 795 800
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 Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 835 840 845
 Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 850 855 860
 Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
 865 870 875 880
 Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 885 890 895
 Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
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 Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
 930 935 940
 Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
 945 950 955 960
 Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
 965 970 975
 Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
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 Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
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 Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
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 Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
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 Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser
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 1075 1080 1085
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 Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
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 Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
 1155 1160 1165
 Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg
 1170 1175 1180
 Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200
 Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Gln
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Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
 1220 1225 1230
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 1330 1335 1340
 Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
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 Ala Val Asp Ser Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn
 1380 1385 1390
 Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
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 Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
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 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
 1425 1430 1435 1440
 Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
 1445 1450 1455
 Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
 1460 1465 1470
 Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1475 1480 1485
 Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys Tyr
 1490 1495 1500
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Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
 1525 1530 1535
 Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
 1540 1545 1550
 Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
 1555 1560 1565
 Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1570 1575 1580
 Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1585 1590 1595 1600
 Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
 1605 1610 1615
 Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
 1620 1625 1630
 Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
 1635 1640 1645
 Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
 1650 1655 1660
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 1665 1670 1675 1680
 Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695
 Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
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 Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
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 1730 1735 1740
 Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
 1745 1750 1755 1760
 Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
 1765 1770 1775
 Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
 1780 1785 1790
 Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1795 1800 1805
 Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
 1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
 1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
 1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
 1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
 1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
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 1940 1945 1950

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 35 40 45
 Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
 50 55 60
 Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
 65 70 75 80
 Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
 85 90 95
 Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
 100 105 110
 Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
 115 120 125
 Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
 130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
 145 150 155 160
 Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
 165 170 175
 Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
 180 185 190
 Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
 195 200 205
 Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
 210 215 220
 Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
 225 230 235 240
 Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
 245 250 255
 Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
 260 265 270
 Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
 275 280 285
 Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
 290 295 300
 Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
 305 310 315 320
 Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
 325 330 335
 Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
 340 345 350
 Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
 355 360 365
 Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
 370 375 380
 Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
 385 390 395 400
 Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
 405 410 415
 Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
 420 425 430
 Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
 435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
 450 455 460
 Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
 465 470 475 480
 Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
 485 490 495
 Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
 500 505 510
 Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
 515 520 525
 Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
 530 535 540
 Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
 545 550 555 560
 Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
 565 570 575
 Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
 580 585 590
 Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
 595 600 605
 Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
 610 615 620
 Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
 625 630 635 640
 Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655
 Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 660 665 670
 Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685
 Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700
 Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720
 Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 725 730 735
 Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765
 Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780
 Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
 785 790 795 800
 Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
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 Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 820 825 830
 Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
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 Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 850 855 860
 Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
 865 870 875 880
 Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 885 890 895
 Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
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 Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
 965 970 975
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 Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
 995 1000 1005
 Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
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 Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
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Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser
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 1075 1080 1085
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 Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
 1140 1145 1150
 Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
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 1170 1175 1180
 Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200
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 1285 1290 1295
 Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
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 Tyr His Cys Val Asn Met Thr Thr Gly Asn Met Phe Asp Ile Ser Asp
 1315 1320 1325
 Val Asn Asn Leu Ser Asp Cys Gln Ala Leu Gly Lys Gln Ala Arg Trp
 1330 1335 1340
 Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
 1345 1350 1355 1360

Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala
 1365 1370 1375
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 1380 1385 1390
 Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
 1395 1400 1405
 Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
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 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
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 Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
 1445 1450 1455
 Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
 1460 1465 1470
 Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1475 1480 1485
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 1490 1495 1500
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 1525 1530 1535
 Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
 1540 1545 1550
 Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
 1555 1560 1565
 Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1570 1575 1580
 Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1585 1590 1595 1600
 Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
 1605 1610 1615
 Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
 1620 1625 1630
 Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
 1635 1640 1645
 Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
 1650 1655 1660

Leu Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
 1665 1670 1675 1680
 Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695
 Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
 1700 1705 1710
 Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
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 1730 1735 1740
 Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
 1745 1750 1755 1760
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 Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1795 1800 1805
 Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1810 1815 1820
 Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
 1825 1830 1835 1840
 Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
 1845 1850 1855
 Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
 1860 1865 1870
 Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
 1875 1880 1885
 Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
 1890 1895 1900
 Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
 1905 1910 1915 1920
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 agctagggttc actgatgtat agaatctttt tctacattta gatatttctt gcaaagtgtt 240
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 agagcaggcc acaagggagc tttcgcaaaa ctctacacgt aaagggtaat gttaaacttaa 420
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 aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaga tgcaaaataac 540
 tgaatatgta aaagggtctca tacatattta tatgtagtag ataagttaca ttttttttagt 600
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 taccatgtct tcatgcagggt ttacttttcc ccctgtgaca gaggataatg ggaatgtttt 720
 ttctttggct caattttgtg tgtgtccgcc agtagatggc gtaccacttt gagtgcgac 780
 ggcctttttt tctttctttt ttttttttcc caaagctgtt ttctgatata tgttgggtac 840
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 tccttacttt aaaatcatct tcatgctgct atttttaacc cagtgttgtt taaatgtaaa 1200
 ttacaggaac caaaggcatc gtttgatgtg taaactgctt actatttctt tatctttcaa 1260
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 tgggtcccatt cttcctaaat catgctaggg catgctttta acaagggtca aatatcttgc 180
 tttgcatcat ccttgctttc tcgatccagg gccataaaaa aaaaagggaat aaaaccaga 240
 cacagagcca gagcaccct atgccaaatg tcaaagatta taggctaatt tcacctgtat 300
 tctcttttcta cagagattat ggagcaagaa aactgaagcc aagccacatc aaggtttgac 360
 agggatgaga tacctgtcaa ggattcatag tagagtggct tactgggaaa ggagcaaaga 420
 atctcttcta gggatattgt aagaataaat gagataattc acagaaggga cctggagctt 480
 ttccggaaaa aggtgctgtg actatctaag gtaactaaac aacttctggg tataagtttg 540
 tttttgtgga aaataaaacta aaatctctac tatttaacaa ggacagctgt atcaggacca 600
 aaagaaggca gaggggtgtt ttcttccttc ctctaccagt ttgttcttcc aaagaggcaa 660
 atacatacag ggagacatag cacagatgac cttagggaat ggaatgatgc caaaggctgt 720
 tgatgtaaga aagagagatt aactcagttt tttttttgtt tttgtttttt tgttgttgtt 780
 gttgttgttt tgagacagag tctctctctg tcgcccaggc tggagtgcag tggcatgaac 840

<210> 71
 <211> 780
 <212> DNA
 <213> Homo sapiens

<400> 71

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gatatatttaa attttatgta ttttaataaa ttataatgtg catataatca ttaataatat 60
atatattcca caccaaggca tcagtaagaa ttaattttta aagtctgctc taatgtgaat 120
ataaaattat gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa 180
aagtaaaaga gaactgcgaa agaactatga gggatttcca aacagcaaaa ttgtcattga 240
agccatgaga aactctactc actaaattct ttaattttctc agcctaccca aatattgggc 300
aaacccta at tctcttgag gggaaaagct gagagtctgg aactagccta tcttccgagg 360
acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat 420
tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt 480
aaaaagttt tcatgatttt gtgatggcac cttgttccat atcatctcag ataaatcaga 540
ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgttattt 600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt 660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga 720
ggctgagaca ggtagatga tacaggcata ccattagcag cagactcaat actaaccag 780
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<210> 72

<211> 1025

<212> DNA

<213> Homo sapiens

<400> 72

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acaaagttat gaaaaggcgg ggggcaggat gcagaataat taagcaattt tattgacaaa 60
ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaac 120
agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaata 180
taatgtttat atattatata tactgtacat tgtagaatgg cttaatcaaa ctaattaaca 240
ttaagtacag acttttgata gatttatgaa cttggccttat tgagaatgag gttgaatgat 300
gatgttttca agttcaaatg tgtagtgcag tactaaaagc atgacttaat gtttatagct 360
ttaaaaagtt actaaagaat gacatttttg ttgatgttct tatgccaat cgcttgcttt 420
cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg 480
taattaaatg tgcaggatga aaagatggca caggcactgt tggtaacccc aggacctgaa 540
agcttccgcc tttttactag agaattctct gctgctatcg aaaaacgtgc tgcagaagag 600
aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat 660
agtacttg gaaagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg 720
gtgtcagagc cctggagga cctggatccc tactatatca ataagaaagt gaggattgat 780
tttagacttc taataaatct ttaatgaaac tcttaactgt aatatacttt tctgggcctt 840
atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt 900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttgggtac 960
agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatagt 1020
caaaa 1025
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<210> 73

<211> 433

<212> DNA

<213> Homo sapiens

<400> 73

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tgtaacyata tgtaatttta aacatctaac atgtttgtag ttatgatata tcaactgggtt 60
taaacaaacc agtttgaaca aacaaattcy attttttaaa aaggtcctca tgtatgtaag 120
ctccttaaat aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt 180
ttatagtaat gaataaagga aaggcaattt cccgattcag tgccacctct gccttgata 240
ttttaactcc actaaaccct gtaggaaaaa ttgctabsaa gattttggta cattcatatc 300
cttttaatgt gaattgccta aatgctatct ctaacagttg atttttaaaga aaatgtcagt 360
tatattttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt 420
catttatttg cat 433
```

<210> 74
 <211> 450
 <212> DNA
 <213> Homo sapiens

<400> 74
 gagtgcacca aggccatatac acaggctttg aagtttctta ttattttatc attgttttaa 60
 aacaaataat attaatattca cagtttttgc atcgataaac ttttttgtgt gttttggatc 120
 atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt 180
 cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaaccc 240
 tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
 actcaaattc tctagcaatc tccttgtggg tatagcctga cttatgggtt ccactttctgt 360
 ctaagaaaag ttattttcat aatatgcagc cggttaaggga ggtctttcgg gggagctatt 420
 cttctacgag gtaagtattt tcccacaaaa 450

<210> 75
 <211> 701
 <212> DNA
 <213> Homo sapiens

<400> 75
 aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt 60
 caaactagat gattatccat aagatacatg aaactattat tctaaaaccc aaatagttaa 120
 accagattag attcctaaag aatataattt ctcttcagtt taactctttg ctcaggcttg 180
 taaaactaac taaatgaata gattatttgg taaatagaag taaggaacaa tattttaatg 240
 aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tttaacagtt 300
 caagcaaaat tggttaattt ggcttggatg tttttcctag gtacacattc actggaatct 360
 atacctttga gtcacttata aaaatccttg caagaggggt ttgcttagaa gattttacgt 420
 ttcttcgtga tccatggaac tggctggatt tcagtgatcat tgtgatggcg tgagtaactt 480
 tgaaaaattg ataagcgcaa aggagtgaat atagtcatag tacaacaag gtctttgtgt 540
 catatattaa atgtagagct ttcttgtagg tcaagttaac tatatgggtt gtgtattttc 600
 agaatacata ttagaatata tattgcaatg taaatatatc cagtaaataga tcaataaatg 660
 gggttatctt catgtcatat agtctttctc ttcatacaaaa t 701

<210> 76
 <211> 286
 <212> DNA
 <213> Homo sapiens

<400> 76
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 aactttgcca aaactatcag taactctgat ttaattctgc aggtatgtaa cagaatttgt 120
 aagcctaggg aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaactat 180
 ttctgtaatc ccaggtgaaga agaaactggg gtaaggtagt aggcccccta tatctccaac 240
 ttttcttgtg tgttattgtg tttgtgtgtg aactccccta ttacag 286

<210> 77
 <211> 515
 <212> DNA
 <213> Homo sapiens

<400> 77
 gtaagaagaa actgggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt 60

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atttgtgtttg tgtgtgaact cccctattac agatatgtga cagagtttgt ggacctgggc 120
aatgtctcag cgttgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt 180
ccaggtgaga gctagggtta acaccgaggt tgactttaat tattgagttt gaaatcaatt 240
tatatgactt acagcattag ccttgttgct tattattaca gtccatcccg gtaaataatg 300
ccaaatgatg tttcaatgtc agtttagctc ctaaaatttt ataaattaca tgcgtattta 360
taaagtcagc ctttgagttt aacagaaaat tgcattgagac atcttcaaaa aatgctaatt 420
tgggcctctt gcgctctctc tctctctttt tcactaccat ggctttacta acagatttgg 480
atthttaccat tcgctgcaga tgtagttaa aaatg

```

<210> 78
 <211> 564
 <212> DNA
 <213> Homo sapiens

```

<400> 78
aaacttcctg actagatatt taaaccttca tattgaattt ccagcaagca cactgttcat 60
gtgtaaaatc tgctgttcat ctatttccca aatcatcagg ctatccatac agctttgggtg 120
tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc 180
atgattttctg gcaactcttc tcaggtaacc tatagttctc tctctgcagg tttaaagacc 240
attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg 300
ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat 360
aaatgtttgc agtggccccc aagcgattct gcttttgaaa ccaacaccac ttcctacttt 420
aatggcacia tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg 480
aaggataaca ttggagatga cagtaagaag tattacatta tgtaaacctt agtgttgctg 540
aatgaatttt caactataaa tagt

```

<210> 79
 <211> 497
 <212> DNA
 <213> Homo sapiens

```

<400> 79
tgagactgtg ggtgtacagc cacctttgta aataactgaa atagtccaac tctgatttat 60
tactaatact aatgtgaata ggattaatat gaaataaaat ggggtttttt ttgtattaac 120
aggctacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atggttcaga 180
tgcagggtaa gaaacataat atatatattt aagatataga actctttgcg aaaaaaaaaa 240
gtaggttaga aaacaactac atgggtatat gtgtagcctt accatgtatg caataaagag 300
cagtgtctgt cccctaggaa gtgccttgct tgccttaccg gattgccact ggtcctaaac 360
tcacagcaat taaaaattat ccctttgtga agacccttcc ccaaaatttc acagttaaga 420
tgttcttaaa ttgatgtctc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta 480
tcagagctgt taggaaa

```

<210> 80
 <211> 501
 <212> DNA
 <213> Homo sapiens

```

<400> 80
aaagagtaaa aatatggtaa ggtcagagcc aaaagtgtgt ggttgctagc tttctgccat 60
tctaaatgtc trwaaawatt tatttgcatc taaattttct atcgggtcttc ctagtgaatt 120
tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat 180
aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa 240
ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga 300
aggatacatc tgtgtgaagg ctggtcgaaa ccccaactat ggctacacaa gctttgacac 360

```

```

ctttagctgg gctttcctgt ctctatttcg actcatgact caagactact gggaaaatct 420
ttaccagttg gtaagggtcca aatgagcatg cataacattt atttttatag acatgtatga 480
aatgaaaagc ataggctgag t                                     501

```

```

<210> 81
<211> 432
<212> DNA
<213> Homo sapiens

```

```

<400> 81
agctaattag tctactgact atctaactgt ggtaatcaga tatttatttg gggacattat 60
actaaaatac tgatggaatt atccccatt tcccctagac attacgtgct gctgggaaaa 120
catacatgat attttttgtc ctggtcattt tcttgggctc attttatttg gtgaatttga 180
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aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag 300
ctcaggtact gagtataaaa mgcaaagatt tatcattatt attmmttagt tctaagtaga 360
aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt 420
gtcattagac ac                                     432

```

```

<210> 82
<211> 489
<212> DNA
<213> Homo sapiens

```

```

<400> 82
tgcaaaactgt tttcaaagct ctgtgttcta aatagtgcct ggctttgttt tatgacaggc 60
agttgcggca gcatcagctg cttcaagaga tttcagtgga atagggtggg taggagagct 120
gttggaagt tcttcagaag catcaaagtt gagttccaaa agtgctaaag aatggaggaa 180
ccgaaggaa aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga 240
cagctttccc aaatccgaat ctgaagacag cgtcaaaaaga agcagcttcc ttttctccat 300
ggtaggaaac agactgacca gtgacaaaaa attctgctcc cctcatcagg tatgattttc 360
tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt 420
ggtacacttt tgtactatct gtacttcagt tgagggacag ggaactaaca tttaatatag 480
ttgtttaaa                                     489

```

```

<210> 83
<211> 653
<212> DNA
<213> Homo sapiens

```

```

<400> 83
gtgaagacta aatgaagtgg ttgtatactt agtaaattgc aaatcagtat tgtagtcag 60
aaaaacactc tttgtactta aatttgcttt aataaaaaata tcaaaatata tgtgtcctct 120
ataaatttga ttatccatgt ttaaggggcaa gagtatacta actccaaaga aaacagatcc 180
tttaatatata atatttatta aataattgct tcttccccct acccccatcc cattcctttc 240
ctttttgctt tctctgcagt ctctcttgag tatccgtggc tccctgtttt cccaagacg 300
caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa 360
tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact 420
gtttgtgccg cacagacatg gagagcgacg caacagtaac gttagttagg ccagtatgtc 480
atccaggatg gtgccagggc ttccagcaaa tggggaagat gcacagcact gtggattgca 540
atgggtgtgg ttccttggtg ggtggacctt cagctctaac gtcacctact gggcaacttc 600
cccagaggtg ataatatag acctagctgc tactgacatt attcaccaat ttg                                     653

```

<210> 84
 <211> 566
 <212> DNA
 <213> Homo sapiens

<400> 84
 gaattctctt aaaggtacta cctgtgatac tttttttaaa aaaaaactgt ttataactta 60
 gcaataattc aatattttat tcttgaaatt cttacctgga aaattgcatg tagcatgatt 120
 tgcaaagaaa tgctatgtgg tgttgattta cttattggga agagtgggtt gagccatcag 180
 tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctcct 240
 accagatttc aatggagatg ctggaggatt cctctggaag gcaaagagcc gtgagcatag 300
 ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
 tgattatgtg ctttgtgaac tattccttct tttcatagaa ttactgaagt ctgttaccga 420
 gatcgaacta tatatttagac ctaagaatgt gatatatggt gtacattatc acattgntta 480
 caaaactaat attggcctta ttctttttga cttgggtcct taccttactt gcagagtgat 540
 atttcaacac ttgatattat atcaat 566

<210> 85
 <211> 748
 <212> DNA
 <213> Homo sapiens

<400> 85
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 aaaaagtcga tctatatgac attttaatta acattttctg aaaatattta atgggattgt 120
 cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttgtt 180
 aaataatgta aaatctacta gcaataataa ctcatTTTTTg ttgttattta ctactcttcc 240
 ttgttattgt ccctccagaa cttgaagaat ctagacagaa atgtccgcca tgctgggtata 300
 gatttgccaa tgtgttcttg atctgggact gctgtgatgc atggttaaaa gtaaaacatc 360
 ttgtgaattt aattgttatg gatccatttg ttgatcttgc catcactatt tgcattgtct 420
 taaataccct ctttatggcc atggagcact accccatgac tgagcaattc agtagtgtgt 480
 tgactgtagg aaacctggta agtacatttg aagtttactt atttactttg gtagatgtgg 540
 gagagataga ccaaagggaa agatgtattt gtgctgtgtt gaacccaaaa attatacct 600
 ctttcctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta 660
 aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggt 720
 gtcttaccag ttgtaaacgt ctcaaaat 748

<210> 86
 <211> 664
 <212> DNA
 <213> Homo sapiens

<400> 86
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 tgtctaattg tcttctttat aaattcgtgt agcatcagtg ttttcagtgc tcttgatagt 120
 agtgctgata tctaattttt taggtcttta ctgggatttt tacagcagaa atggttctca 180
 agatcattgc catggatcct tattactatt tccaagaagg ctggaatata tttgatggaa 240
 ttattgtcag cctcagttta atggagcttg gtctgtcaaa tgtggaggga ttgtctgtac 300
 tgcatcatt cagactggta tctatttata tataccctg tcgctcattg gcacaacatt 360
 tattttgaaa ttgaatcaat gtatatttat ataattatta attttaattt taaatttaca 420
 tcaatatgtg acattctaag aaaacatgta aacatccyct ttaaagctaa accattttct 480
 aagaatgatg aaagcattca aaatactcta taatgattag gtatgtaggg cacattagaa 540
 aacctacaag tactttctaa aactgtgttt taagtttatg aagctttttt ggccttacag 600
 tctgtaaaga tacgcaaata aaaatttaga cccagtttaa ttttagcttt ttattaaccc 660
 tact 664

<210> 87
 <211> 750
 <212> DNA
 <213> Homo sapiens

<400> 87
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 cactatttttt tctggatttg aaattgaatc agttcagtat attttgagtt tttacatcta 120
 ccacgtgttg ttctatgata ccacatacta ataaaaataat gtctaaaatt atattatgat 180
 tactactaac agcatctttt cacttgatta cagcttagag ttttcaagtt ggcaaaatcc 240
 tggcccacac taaatatgct aattaagatc attggcaatt ctgtgggggc tctaggaaac 300
 ctcaccttgg tgttggccat catcgtcttc atttttgctg tggtcggcat gcagctcttt 360
 ggtaagagct acaaagaatg tgtctgcaag atcaatgatg actgtacgct cccacgggtg 420
 cacatgaacg acttcttcca ctccctcctg attgtgttcc gcgtgctgtg tggagagtgg 480
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 atgttgggtca tggtcatttg aaaccttgtg gtatgtatgt agtacaaatg ctcataaatt 600
 agaacaagag cagacagtag ctaggaacgt ggccagatgt agtaaacata tctctgggtt 660
 atagtaagtg gcctagactg aaatccccct attagcactc agagaataag caagttattt 720
 aacttctcct gggctctggt ttcccatttt 750

<210> 88
 <211> 768
 <212> DNA
 <213> Homo sapiens

<400> 88
 ccttagagca ggatattagg tccttttaaag agtgtgtgac ttagacatgg catctgaaat 60
 atagtaagca ttcaataaac atttgttgaa ataatttttag caaagatcta tgagttccct 120
 ttttaggctg ttattttaa gcatatttca atattaarat aggcattttt ctttttttct 180
 tttaggttct gaacctcttt ctggccttat tgttgagttc atttagctca gacaaccttg 240
 ctgctactga tgatgacaat gaaatgaata atctgcagat tgcagtagga agaatgcaaa 300
 agggaattga ttatgtgaaa aataagatgc gggagtgttt ccaaaaagcc ttttttagaa 360
 agccaaaagt tatagaaatc catgaaggca ataagataga cagctgcatg tccaataata 420
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 gtgtaggtac tggaagcagt gttgaaaaat acgtaatcga tgaaaatgat tatatgtcat 540
 tcataaaciaa cccagcctc accgtcacag tgccaattgc tgttgagag tctgactttg 600
 aaaacttaaa tactgaagag ttcagcagtg agtcagaact agaagaaagc aaggaggtta 660
 ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttattttac 720
 tatttttcatt gtgcttatat gcattatcga aaagcaatga ttgtaagt 768

<210> 89
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 89
 taattattag tacataatga tcagtaatgc taatagagtt aaatgctatc actacatttt 60
 ttttcacaca atgacacagt atttcccagt tagttaaata aaagggggaa aatcacatct 120
 ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag 180
 ttgatgttgt tctaccccga gaaggatgaac aagctgaaac tgaacccgaa gaagacctta 240
 aaccggaagc ttgttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc 300
 cttgttcttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt 360
 gtggtggcct atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga 420

ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c

471

<210> 90
<211> 623
<212> DNA
<213> Homo sapiens

<400> 90
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gctgacgata actaggaaat gaaggagatg gttaccctat gaaatgatta cctggaagtg 120
gagtggggaa ggggcaagaa agtttatttt ttcctatttt agattaaaat atatttttta 180
attaactata ttttsattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca 240
gaagaaggca aagggaagat ctgggtggaat cttcgaaaaa cctgctacag tattgttgag 300
cacaactggg ttgagacttt cattgtgttc atgacccctc tcagtagtgg tgcatgtgta 360
agtgaatgac atattggcaa gaatcagatt ctgggtgaaat agttttattct ccaaaattac 420
cagatgcaaa cactgagctt cagaatcaaa agaaaaggca tatctgtgtc ttgcagagct 480
tggcacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag 540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca 600
tttgcagaga cattctgtaa cca 623

<210> 91
<211> 520
<212> DNA
<213> Homo sapiens

<400> 91
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ccatttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac 180
agcgaaagac tatcaaaaac atgctagaat atgctgacaa agtctttacc tatatatcca 240
ttctggaaat gcttctcaaa tgggttgctt atggattttc aacatatttc actaatgcct 300
ggtgctggct agattttcttg atcgttgatg taagtatttt aagtgatttt tataaaattg 360
tttttaaaag aggcaagttt gacatttcat atgtttctgt tattaaaact ttcactaata 420
atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc 480
tcatgggaaa gagtagagga ggtcctaacc atgggcagtg 520

<210> 92
<211> 595
<212> DNA
<213> Homo sapiens

<400> 92
ctaactaata atttaagcac acatccatga aggatctggc attgaactca atcctgaatt 60
atcagtggta tatgcacaag ttgaaaaggg gtccatggta taaaatatct aactggagat 120
attgacacgt gttgataaat atgggcaagt attctggttt cattgggttaa aaaaaagcaa 180
tagtatgaga tgagactggc aatataagat gacccacta tgtggaagat gaaagtgtgc 240
aaggatatgc caaattagta tttagtctgc attaaataga taccacaccc tataccttca 300
gtcaacagtt tatttcttg tgaactaatt aatttttttt tccttttgta ggtttctttg 360
gttagcctgg tagccaatgc tcttggttac tcagaactcg gtgccatcaa atcattacgg 420
acattaagag cttaagacc tctaagagcc ttatcccgtt ttgaaggcat gagggtaaga 480
agaatagaca ctctaattat tcatgtcaaa aattacatgt aggtaatgat ttagatagaa 540
aagggtgcc a tactcttctg atattttatt caatagaaat tacagaatta gaagc 595

<210> 93
 <211> 787
 <212> DNA
 <213> Homo sapiens

<400> 93
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 ctttagcatc atgggtgtga atttgtttgc tggcaagttc taccactgtg ttaacatgac 420
 aacgggtaac atgtttgaca ttagtgatgt taacaatttg agtgactgtc aggctcttgg 480
 caagcaagct cgggtgaaaa acgtgaaagt aaactttgat aatgttggcg ctggctatct 540
 tgcactgctt caagtggtaa gtggctactg tacgagtttt gaaaaagttt tcaagatgtt 600
 tcaaggaaga ttatttccct gatgttcttc gtttgaatga ctaacatttg acagcatgaa 660
 aaaaagttta tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca 720
 attattttat aatgtatttt ccttagtggtt aagcttttag tatgttttaa tgtgatttta 780
 tattttct 787

<210> 94
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 94
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 tttcatctgg ttaaatgtca ttgttaggtg aaatttttat gaacaattca aatatatgtt 180
 atttacaggc cacattttaa ggctggatgg atattatgta tgcagctgtt gattcacgag 240
 atgtaagtat cactcaaata ttatttatag gttctagatt tcttatgggtg aatattgggtg 300
 gtaattttaa cactgataca tccaaaattc tatattagaa catttaatat tgcataataa 360
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 tgtagcta atgaaacg 438

<210> 95
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 95
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 aagtagcact gtattaagta acagcactca ataaattact gatttagtgt aagtattttat 180
 agtatttttc atattattta atattttcaa tatcatttag gttaaacttc agcctgtata 240
 tgaagaaaat ctgtacatgt atttatactt tgtcatcttt atcatctttg ggtcattctt 300
 cactctgaat ctattcattg gtgtcatcat agataacttc aaccagcaga aaaagaagat 360
 aagtattctt tagctttttac ctttcttcat tctgggggtt tgtctgttaa tacagccaaa 420
 taaccagaat acctgtgggtc atgacagact taaatcatgt ttatattatt ttcagttgcc 480
 catgtgggta ttttaagctgc agggattcca gcctctagtc agtggctcct ctcaaagttt 540
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<210> 96
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 96
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 aagcaggata aatgtatatg taggaggata atatccactt aaaaattaga aaagattaaa 180
 ggaaagacaa atatTTTTTg tgaaagtact attggaacac agaattgtaa ccagttttat 240
 actatgtctt tactttggag gtcaagacat ctttatgaca gaggaacaga aaaaatatta 300
 caatgcaatg aagaaacttg gatccaagaa acctcagaaa cccatacctc gccagcaggt 360
 aagaattact tgtctccttt aatgttccaa agccatgctt ccatatgggtc aaattgagca 420
 atgctctgga gcagaacata ttaggtgata tcaccaatat tgagccctaa ttataaagtt 480
 catatTTTgC atcataattc acaacttctg cactcattag gagttaccac attccaaaaa 540
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 aatacttcca aagcaagggt cactttcctg ctaccaa 637

<210> 97
 <211> 759
 <212> DNA
 <213> Homo sapiens

<400> 97
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 gaagagaaaa aaagcacaca aaattgTTTg gggtaatatg aggaggggtg acatccatcc 120
 cgtatgtgga agggctTTtT ctacaatttt actgcattat tctttatgaa atatatatag 180
 taaccttatt tctcttctct cactttctag aacaaattcc aaggaatggt ctttgatttt 240
 gtaaccagac aagtctttga tatcagcatc atgatcctca tctgcctcaa catggtcacc 300
 atgatgggtg aaacggatga ccagggcaaa tacatgaccc tagttttgtc ccggatcaac 360
 ctagtTTtCa ttgttctggt cactggagaa tttgtgctga agctcgtctc cctcagacac 420
 tactacttca ctataggctg gaacatcttt gactttgtgg tgggtgattct ctccattgta 480
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 aacactagca tatttgaata aaaactctga aacctgggtt tattcacaaa gctaactagt 660
 tagaaaccat gtttaggaata ccagatttgg gaaagagggt aagaagacag gaaataaaca 720
 ttatcaggta ctctcctaata cttaaaccac ggtcacagg 759

<210> 98
 <211> 3975
 <212> DNA
 <213> Homo sapiens

<400> 98
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 aaagtatttt gtgtccctta ccttgttccg agtgatccgt cttgccagga ttggccgaat 240
 cctacgtctg atcaaaggag caaaggggat ccgcacgctg ctctttgctt tgatgatgtc 300
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ccaactatgg	ttgcctcaat	ataacctttt	a	attcatagat	gtttttttttt	3060
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atttcactta	ttggcctctg	gggttttttg	t	ttttgtttt	ttgctgttgg	3420
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aaattttacaa	cacagactag	catgattcac	c	caagcagtac	tacagaacaa	3540
aaagcagctt	tgtgcacttt	tatgtgtgca	a	aaggatcaag	ttcacatgtt	3600
ggtttgataa	taatagtagt	aaccacctac	a	aatagctttc	aatttcaatt	3660
gctataagca	tctaaactca	tcttctttca	a	atataattga	tgctatctcc	3720
gtggctaata	aatgtttacat	tctttgttac	t	ttaaatgcat	tatataaact	3780
cataagggtat	taatgatata	gttattgaga	a	atttatatta	actttttttt	3840
tggtatttatg	tgaggtcaaa	accaaactct	t	tattctcagt	ggaaaactcc	3900
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<210> 99
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 99
tgtgttctgc cccagtgaga ct 22

<210> 100
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 100
cttcttgctc tgcccaaact gaat 24

<210> 101
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 101
ggcgatgtaa tgtaagggtgc tgtc 24

<210> 102
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 102
gtgccttcag ttgcaattgt tcag 24

<210> 103
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

 <400> 103
 ttaggaattt catatgcaga ataa 24

 <210> 104
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

 <400> 104
 tgggccattt ttcgtcgtc 19

 <210> 105
 <211> 25
 <212> DNA
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 <220>
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 oligonucleotide

 <400> 105
 gaaagacgca ttgcagaaga aaagg 25

 <210> 106
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 oligonucleotide

 <400> 106
 ctattggcat gtgttggtgc taca 24

 <210> 107
 <211> 25
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 <220>
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 oligonucleotide

<400> 107
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<210> 108
 <211> 25
 <212> DNA
 <213> Artificial Sequence

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 oligonucleotide

<400> 108
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<210> 109
 <211> 24
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 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 109
 gcagtttggg cttttcaatg ttag 24

<210> 110
 <211> 24
 <212> DNA
 <213> Artificial Sequence

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 <223> Description of Artificial Sequence: synthetic
 oligonucleotide

<400> 110
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<210> 111
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<220>
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 oligonucleotide

<400> 111
 ttagggctac gtttcatttg tatg 24

<210> 112

<211> 24
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 oligonucleotide

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 <210> 113
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 oligonucleotide

 <400> 113
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 <210> 114
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 <212> DNA
 <213> Artificial Sequence

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 oligonucleotide

 <400> 114
 tccaggctga taagctatgt ctaa 24

 <210> 115
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
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 oligonucleotide

 <400> 115
 ctgtggcctg cctgagcgta tt 22

 <210> 116
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<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 116
ccaattctac tttttaagga aatg 24

<210> 117
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oligonucleotide

<400> 117
aaatacttgt gcctttgaa 19

<210> 118
<211> 23
<212> DNA
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oligonucleotide

<400> 118
gtacatacaa tatacacaga tgc 23

<210> 119
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 119
aggcagcaga acgacttgta ata 23

<210> 120
<211> 24
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 120
atccggtttt aatttcataa ctca 24

<210> 121
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 121
gttgagcacc cttagtgaat aata 24

<210> 122
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 122
tcacacgctc tagactactt ctct 24

<210> 123
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 123
tgcaaatact tcagcccttt caaa 24

<210> 124
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide

<400> 124
ttccccacca gactgctctt tc 22

<210> 125
<211> 18
<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 125

gcagcaggca ggctctca

18

<210> 126

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 126

tctcccatgt tttaattttc aacc

24

<210> 127

<211> 24

<212> DNA

<213> Artificial Sequence

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oligonucleotide

<400> 127

ataatcttgc aaaatgaaat caca

24

<210> 128

<211> 19

<212> DNA

<213> Artificial Sequence

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oligonucleotide

<400> 128

atccgggatg acctactgg

19

<210> 129

<211> 24

<212> DNA

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oligonucleotide

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<400> 132 tgcactattc ccaactcaca aa	22
<210> 133 <211> 24 <212> DNA <213> Artificial Sequence	
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<210> 134
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 <400> 134
 gtgatggcca ggtcaacaaa 20

 <210> 135
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 oligonucleotide

 <400> 135
 ctgggactgt tctccatatt gggt 24

 <210> 136
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 oligonucleotide

 <400> 136
 tttgcagggg ccaggaag 18

 <210> 137
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 <400> 137
 cattgtggga aaatagcata agc 23

 <210> 138
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 <400> 138
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 <210> 139
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 <400> 139
 taatgctttt aagaatcata caaa 24

 <210> 140
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 oligonucleotide

 <400> 140
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 <210> 141
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 <400> 141
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 <210> 142
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 oligonucleotide

 <400> 142

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